

Abstract

An apparatus and method for carrying signature bundles are provided that allow for many different sizes of bundles to be handled and manipulated in an easy and very agile fashion for low cycle times and for being deposited in various pallet patterns. The apparatus can include several units adjustably mounted relative to each other with each having bundle gripping members that can likewise be adjusted for varying signature formats. The upper clamp head gripping member preferably has a universal mount so that it self-adjusts to pivot for staying in flush engagement with sloped bundles. The units have a very thin housing to allow an operator to gain a good view of the bundles carried in front thereof. The units preferably include pulley drive systems provided with drive ratios to keep the housing size to a minimum while allowing a large advancing stroke for the gripping members for handling of different sized bundles. A load balancing system is preferably employed that allows the operator to manipulate the apparatus as if it were weightless whether unloaded or loaded with one or more bundles. The load balancing system can provide a variable lifting force with the lifting force being automatically changed depending on the loading of the apparatus to keep it weightless so that the apparatus glides when the operator exerts directional and acceleration/deceleration forces as by pushing or pulling on the apparatus.